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## CAESAREAN SECTION IN THE EWE*


BY

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The caesarean operation is an everyday occurrence in small-animal practice and is being performed with increasing frequency in the bovine species. There is, however, a dearth of case reports concerning this operation in the ewe, a search of the literature available to the writer revealing only one report of a successful outcome (Farquharson, J., 1949).

It seems probable that, in the past, any major surgical intervention in the ovine species was unjustified on the grounds of economy, the veterinarian being unable to demand a fee commensurate with the amount of time and skill involved in the preparation for and the execution of the operation.

At the present time of food shortage the value of sheep has risen to a high plane; an owner, therefore, now regards his flock with a different economic eye and feels that he is justified in increasing his financial outlay in order to obtain efficient professional assistance. This factor has been brought into sharp perspective during the lambing season just closed, by the large number of ovine dystocia cases admitted to this clinic. During this period, the writer had occasion to perform the caesarean operation five times, the indications for surgical intervention being:—

(*a*) Pregnancy Toxaemia.
(*b*) Spasm of the Cervix.
(*c*) Emphysematous Foetus.
(*d*) Schistosomus Reflexus and Rupture of the Uterus.
(*e*) Gross Oversize of the Foetus.

### TECHNIQUE OF THE OPERATION

*Restraint.*—The ewe is placed in left lateral recumbency on a table of suitable height for the obstetrician. Since all the operations in this series of cases were performed under nerve block anaesthesia, it was felt advisable to fix the animal's legs to the table by means of hobbles, although in the majority of cases such a precaution would appear to have been unnecessary, the ewe rarely moving after the injection of the anaesthetic agent was completed. Adequate fixation of the limbs, head and neck, however, does free an assistant for more essential work which the surgeon might demand at any time during the operation—for example, holding up the uterus during incision of that organ and attending to the care of the new-born lamb.

*Anaesthesia.*—At the time of writing the British veterinarian is still hampered by the anomalies of the archaic Animals (Anaesthetics) Act, 1919, but since the Act applies only to equines, bovines, canines and felines, the veterinary obstetrician, if he so desires, may employ any form of anaesthesia in the ovine species without incurring the wrath of the investigators of the law.

The success of local or regional anaesthesia for the performance of this operation in the bovine subject prompted the employment of nerve block anaesthesia in the ewe. Complete anaesthesia was obtained in every case and thus the necessity for employing general anaesthesia with its attendant disadvantages was overcome. This factor assumes greater importance when dealing with a subject which has already sustained liver damage as is encountered in pregnancy toxaemia.

Anaesthesia was obtained by means of an "inverted 'L' block," 2 per cent. novocaine being deposited first subcutaneously then into the deeper-situated muscle layers. The use of a hypodermic needle, 4 to 5 inches long, ensures that only one needle puncture be made through the skin—at the junction of the two arms of the "L"—the solution being deposited along the horizontal arm, then along the vertical limb. The more distal parts of the "L" may be desensitised by rolling the skin over the end of the needle which has already been inserted to the fullest extent under the skin. The incision is made within the angle formed by the branches of the "L" as depicted in Fig. 1.

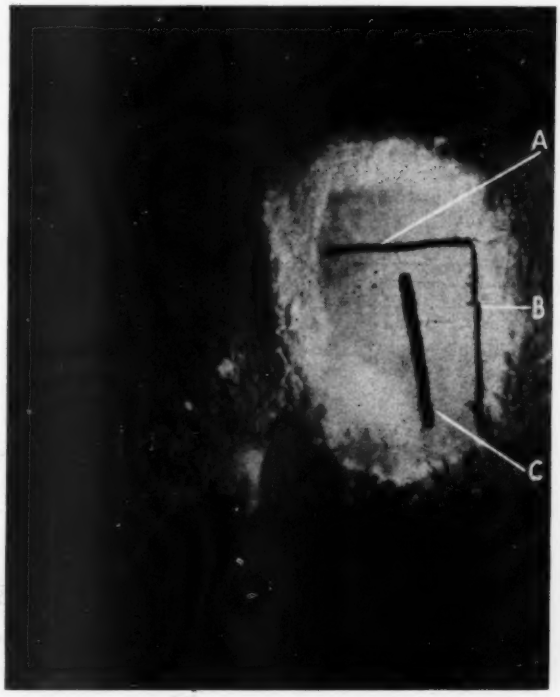


FIG. 1.—Showing: (a) Horizontal arm of the "L" block, (b) Vertical arm of the "L" block, (c) Line of the incision.

*Pre-operative Preparation.*—The area surrounding the intended operation site is sheared, shaved and cleaned with

* This article was despatched before publication of that by J. B. Harmar and E. D. Mount in the July 7th issue of *The Veterinary Record*.

soap and water, ether, alcohol, and some reliable skin antiseptic.

*Location of the Incision.*—Due to the difference in stature and conformation of the various breeds of sheep, it is not practicable to lay down a fixed site for the skin incision. It is perhaps sufficient to state that this incision is made in the lower flank region and extends mainly in a dorso-ventral direction. The lower part of the incision should avoid cutting through the fleshy portion of the fold of the flank and should terminate not less than one inch above the mammary vein.

The actual length of the incision (6 to 8 inches) is dependent on the ease with which the surgeon's hand may be placed inside the abdominal cavity, no advantage being gained from too limited an abdominal opening.

The tissues of the muscular and aponeurotic layers severed by the knife will vary somewhat in accordance with the location of the cutaneous incision within the lower flank region. An anatomical study of this area was made and the following data were recorded:—

The incision depicted in Fig. 1 passed the following layers:—

1. *Skin.*—The veterinary surgeon accustomed to the apparently thick skin of the bovine abdominal flank, but unfamiliar with the same integument in the ovine species, will find the skin of the ewe very thin and freely movable, so that care must be taken not to make too bold an incision.
2. *M. Cutaneous Trunci,* which is present throughout the entire incision and increases in thickness as the ventral limit of the incision is reached.
3. *Abdominal Tunic,* which is closely associated with the aponeurosis of the external oblique abdominal muscle, the combined structures forming a very stout layer.
4. *M. Rectus Abdominis.*
5. *Internal Sheath of the Rectus Abdominis Muscle,* which at this site consists of the aponeurosis of the transverse abdominal muscle.
6. *Peritoneum,* which is thin and closely applied to the inner face of the previously mentioned layer.

In this dissection it was noted that no muscle fibres of the oblique or transverse abdominal muscles were present, the only muscle tissues in evidence being those of the Cutaneous Trunci and Rectus Abdominis (see Fig. 2).

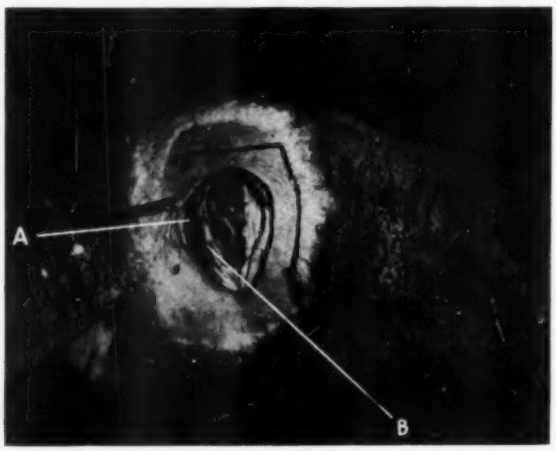


Fig. 2.—Showing, after incision of the abdominal wall: (a) M. cutaneous trunci, (b) M. rectus abdominis.

It is appreciated, however, that any slight variation in the site of the incision will alter the disposition of the muscular and aponeurotic tissues; for instance, the incision used in Fig. 3, a left-sided approach on a cadaver, was made about 2 inches higher up the flank than that in Fig. 1, consequently at the upper extremity of the incision muscle fibres of the oblique and transverse muscles were evident before being succeeded by their aponeuroses.

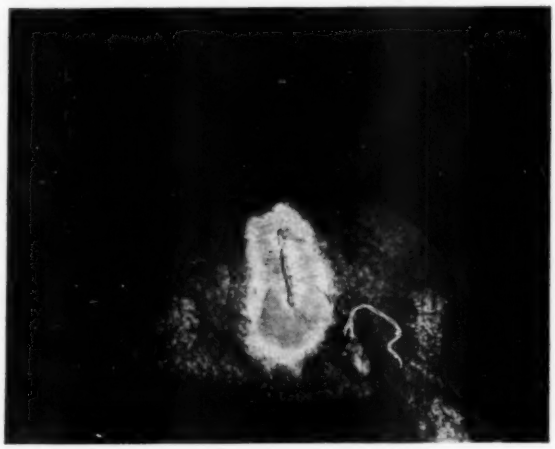

Fig. 3.—Showing a left flank incision closed with horizontal mattress sutures.

*Modus Operandi.*—A sterile drape with an 8-inch cut is placed in position so that the opening corresponds with the line of the incision. Experience gained in this operation in the bovine prompts the writer to suggest that if the foetus can be ballotted behind the rumen on the left side a lower left flank approach is indicated. The foetus was palpable on the right side of each occasion in this series, consequently the indication for a left side approach did not arise.

After incision of the skin the underlying layers are incised in the same direction until the lace-like omentum is exposed. This latter structure is drawn forward in preference to being incised and the abdominal viscera are exposed. Any loop of bowel which may tend to extrude through the incision is restrained by means of a sterile towel soaked in warm normal saline solution, while the operator's hand locates the gravid horn and brings it close to the abdominal wall. If possible, the ovarian end of the horn should be drawn through the incision prior to cutting into the uterus. If this is not possible or is considered too hazardous a risk to take, the horn must be opened while still in the abdomen.

The knowledge that the ovine uterus will withstand very limited traumatic insult from rude hands during the correction of a foetal malposture when delivery by the vaginal route is effected instils an especial sense of care and caution in the obstetrician during the performance of a caesarean section in the ewe. Injudicious handling of the uterus at this stage will almost certainly result in rupture of that organ, particularly when twin lambs are present. It is felt that it is safer to lift the gravid horn to the abdominal opening by placing the hand underneath the cornu rather than to grasp a part of the foetus through the uterine wall.

The uterus is then opened, the foetal membranes are rup-

tured and the lamb delivered as expeditiously as possible without tearing the extremities of the uterine incision. If it is felt that the volume of the lamb is too great to traverse the uterine opening, the incision should be extended by scissors or scalpel before attempting delivery.

The care of the lamb is then entrusted to an assistant.

Twin lambs, even if bicornual, are easily removed through the one incision.

The foetal membranes are removed at this stage, but if their attempted removal is hard to achieve, they are best left *in situ* for later passage *per vaginam*.

After ensuring that no further lambs are present in the uterus, the cornual incision is closed by a single layer of a continuous Lembert suture using medium chromic catgut (No. 1) with a " swedged-on " needle.

Posterior Pituitary Extract (2 to 3 c.c.) is now given intramuscularly to accelerate uterine involution.

The incision through the peritoneum, abdominal musculature and aponeurotic layers is closed by a single layer of catgut (No. 2) in the form of a continuous or interrupted suture.

The lips of the incision through the skin and cutaneous trunci muscle are brought into apposition by interrupted horizontal mattress sutures of nylon.

*After-treatment* is largely symptomatic and will depend on the response of the individual case to the operation and the " treatment " meted out before surgical intervention was sought.

## Case Reports

Case 1

*Subject.*—Columbia ewe, aged five years.

*History.*—This ewe, obviously pregnant, was admitted to hospital on February 9th, 1951, suffering from pregnancy toxaemia. General condition was poor, the animal being very weak and exhausted and unable to stand. Seven days later the ewe was showing no progress towards recovery; a caesarean operation therefore was decided upon in order to save the lambs.

*Treatment.*—Live twin lambs delivered. Only part of the placenta could be removed at the time of the operation. Next day the ewe was able to stand for short periods if assisted to rise. The remainder of the placenta was passed *per vaginam*.

As the ewe was unable to nurse the lambs, resort was made to artificial feeding of the twins, but the weaker one died two days later, while the other was sent home with the ewe three days after the operation. The owner reported that the ewe died soon after being discharged. No autopsy was performed.

Case 2

*Subject.*—Southdown ewe, aged seven years.

*History.*—This case was admitted on the evening of February 27th, 1951, the owner stating that the membranes had ruptured that morning, but that the second stage of labour had commenced about two hours before admission to the clinic. Examination revealed that two forelegs were protruding from the cervix with the latter structure contracted tightly down on the limbs, making any further vaginal palpation of the foetus an impossibility.

*Treatment.*—Twin lambs were removed, one dead and the other in a state of suspended animation which after stimulant treatment gave way to healthy vigour. The ewe died 12 hours later.

*Autopsy.*—Revealed a liver condition strongly suggestive of pregnancy toxaemia.

Case 3

*Subject.*—Range ewe, aged.

*History.*—This case was admitted on the evening of March 15th, 1951. The ewe had started labour that morning and the owner had attempted delivery by forced traction on the lamb, but had succeeded only in pulling off both the hind legs. The vaginal mucosa could best be described as " livid."

*Treatment.*—Incision into the peritoneal cavity resulted in the liberation of a considerable quantity of peritoneal transudate.

A large emphysematous foetus (Fig. 4) was delivered and a quantity of pus was drained from the uterus by " lipping " the edges of the uterine wound over the lower extremity of the abdominal incision. The remainder of the discharge was passed *per vaginam*. The membranes were removed at the time of the operation. Closure of the uterus was a slow procedure because of the friable nature of the tissue. Closer examination revealed a number of areas where a cystic condition of the uterine wall was present.

Next morning the ewe was on her feet attempting strenuously to evade capture for the purpose of temperature recording. A three-day course of penicillin was prescribed. The ewe made an uneventful recovery and was discharged five days after operation.

Fig. 4.—Emphysematous foetus, minus the hind limbs, removed from Case 3.

Case 4

*Subject.*—Cross-bred ewe, aged five years.

*History.*—This case was admitted on March 27th, 1951, the owner stating that the labour had commenced one hour previously and that all four legs were present in the vagina. Examination revealed three legs at the vulva and one still in the vagina. A large tear was noted in the uterine wall and an emergency caesarean operation was carried out immediately, a very unfavourable prognosis being given on account of the damage to the uterus.

*Treatment.*—Considerable haemorrhage had occurred from the torn uterus as was evident by the quantity of blood free in the peritoneal cavity.

A *Schistosomus reflexus* (Fig. 5) was removed from the uterus.

The ewe died as closure of the uterine rupture was being effected.

Fig. 5.—*Schistosomus reflexus* removed from Case 4.

*Autopsy.*—Revealed the following: Vulva—oedematous; Uterus—haemorrhagic; Cervix—haemorrhagic and mutilated; Trachea—petechial haemorrhages; Lungs—congested; Liver—slight fatty change.

Case 5

*Subject.*—Black face ewe, aged 14 months.

*History.*—This case was admitted on May 18th, 1951. Labour had been in evidence for six hours and during this period the owner had endeavoured to deliver the lamb by traction on the only part presented in the vulva—the tail. To quote the owner, he had " pulled the tail off and messed things up!"

Examination revealed a breech presentation of an over-sized foetus. The vagina was very badly bruised. Though the ewe was unable to rise, its condition and temperament seemed ideal for surgical intervention. A guarded prognosis was given, however, because of the condition of the vagina.

*Treatment.*—Incision of the peritoneum permitted the escape of a large amount of sanguineous fluid. A grossly oversized dead lamb was removed from the uterus along with the foetal membranes.

*After-treatment.*—This consisted in the administration of a course of penicillin and dextrose solution given subcutaneously. Three days after the operation, the ewe began to eat and drink.

The use of the hind limbs gradually returned and after another six days the ewe was able to stand up and walk without assistance.

The case was discharged ten days after operation, well able to struggle against man's restraining influence (Fig. 6).

Fig. 6.—Ewe in Case 5, ten days after operation, completely recovered from posterior paralysis.

## Conclusion

Only two of the five cases recovered—a low figure when compared with the results of the operation in the bovine species, but it is perhaps only fair to point out that in only two of the cases could the surgical risk be considered anything other than unfavourable (Cases 2 and 5) and of these one died shortly after operation (Case 2).

At the present time when emphasis is rightly placed on an appreciation of the fundamentals of good surgical technique, it is felt that better results are bound to follow.

*Acknowledgment.*—I am grateful to my colleague, Dr. R. W. Davis, Head of the Department of Veterinary Anatomy, School of Veterinary Medicine, Colorado A. & M. College, for his helpful advice on anatomical study of this work.

*Reference.*—Farquharson, J. (1949.) *J. Amer. vet. med. Ass.* **99.** 60.

## FAT-FREE MILK!

The Ontario Minister of Agriculture is investigating the possibility of marketing 2 per cent. milk, child and nutrition experts having told him that "anything over 2·6 per cent. milk is not good for children." Another expert has gone as far as to lay it down that nobody needs 3·4 per cent. milk from the standpoint of nutrition.

In New York distributors have already taken this step and pasteurised skim milk is decoratively called "fat-free milk." It is actually being sold at a price higher than whole milk as a valuable food that will not fatten!—*Farmer and Stock-breeder.*

# TRANSPORTATION OF HORSES IN SHIPS

BY

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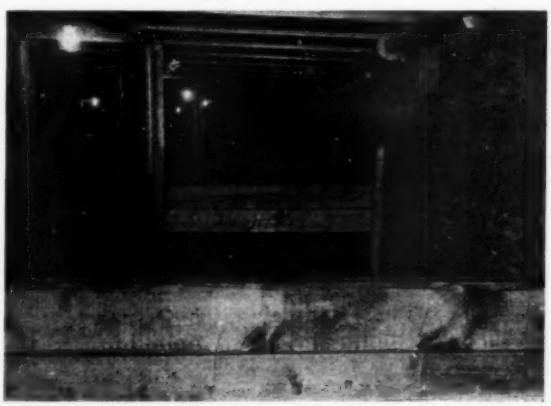
From the column "Questions in Parliament" in Nos. 9 and 15, Vol. 63, of this periodical, it appears that matters relating to the transportation of horses in ships attract interest in Great Britain. In this short article, therefore, it is proposed to deal with some of the experience gained in Denmark towards a successful solution of this problem.

During the years after the end of the second World War a vast number of horses were shipped from Scandinavia and the U.S.A. for use in the reconstruction of the war-devastated areas bordering upon the Baltic, the U.S.S.R. and Poland. These transportations were anything but satisfactory, since, at the beginning, many horses were dead or severely injured on arrival at the port of discharge. In Denmark attention was concentrated on this matter, several ships being adapted for the particular purpose, and the experience gained hereby has been utilised in the drafting of a Notification issued by the Ministry of Commerce on August 6th, 1949, concerning the carriage by sea of living animals, which provisions now govern the transportation of horses by sea in Denmark.

The following is a brief outline of the main features in the adaptation of a ship which thereby has been rendered eminently suitable for the purpose of transporting horses. Her holds consist of two decks, each of 312 sq.m., and having an overhead height of 225 cm. Both decks, which extend in a horizontal plane throughout, are boarded with heavy fir. The horses are placed athwartships in three longitudinal rows divided into stalls (328/202·5 cm). A midship feeding passage, lined by the two rows of horse stalls, has an inside width of 105 cm. A third row of horses is tied to a port feeding passage, 55 cm. in width. Circular iron stanchions of a diameter of 10 cm. and extending from loft to deck divide the cargo holds in the stalls, which accommodate four to six horses, according to their size. Each iron stanchion has three grooves extending to a height of 128 cm. to receive beams, and are provided with seven holes spaced at equal intervals. The beams corresponding to the said grooves and dividing the stalls are of a thickness of 7½ cm. and a width of 25 cm. and have protective band irons. The chest boards are fitted with tie rings for the horses.



The horses walk on board and ashore by a ramp or loading platform, 1½ metres wide; a corresponding slipway connects the two decks. All sharp corners and edges are avoided, as far as possible, and all material is of ample dimensions. When shipped, the animals must be without hind feet shoes and be provided with new, strong leather halters and substantial double ropes by which they are tied to the chest beam rings. They are watered from a portable water cart and fed with hay and bran. The ventilation system is adapted to satisfy very large requirements. The holds are most carefully cleaned after discharge of each consignment of horses and subsequently disinfected and whitewashed.

During the voyage the horses are groomed and cared for by experienced attendants, one for every 50 horses. A constant watch is kept on the horses, and the holds are always fully electrically illuminated. A veterinary surgeon accompanies each transport. The shipment of horses is subject to official veterinary supervision, and many precautions are taken to prevent the outbreak of infectious and contagious diseases and to ensure the shipment of perfectly sound animals only.

The following table shows consignments shipped and discharged by the vessel in question:—

| | | | | |
|---|---|---|---|---|
| 17.1.48 | Kolding, Denmark—Libau | 20.1.48 | 324 horses | |
| 25.1.48 | " " " | 28.1.48 | 328 " | |
| 3.2.48 | " " " | 5.2.48 | 328 " | |
| 11.2.48 | " " " | 14.2.48 | 320 " | |
| 20.2.48 | " " " | 23.2.48 | 328 " | (1 rejected) |
| 27.2.48 | " " " | 1.3.48 | 318 " | " |
| 5.4.48 | Malmø, Sweden—Stettin | 7.4.48 | 276 cows | |
| 12.4.48 | " " " | 13.4.48 | 235 horses | |
| 21.4.48 | Sarpsborg, Norway—Danzig | 23.4.48 | 374 " | |
| 27.4.48 | " " " | 30.4.48 | 377 " | (1 dead) |
| 9.5.48 | " " —Stettin | 12.5.48 | 379 " | |
| 15.5.48 | " " " | 17.5.48 | 346 " | (1 dead) |
| 22.5.48 | " " —Gdansk | 25.5.48 | 382 " | |
| 28.5.48 | " " " | 31.5.48 | 364 " | |
| 4.6.48 | " " " | 6.6.48 | 249 " | |
| 16.6.48 | Malmø, Sweden—Libau | 18.6.48 | 321 " | |
| 23.6.48 | " " " | 25.6.48 | 298 " | |
| 1.7.48 | " " " | 3.7.48 | 287 " | |
| 8.7.48 | " " " | 10.7.48 | 295 " | (1 dead) |
| 20.8.48 | Naestved, Denmark—Gdansk | 22.8.48 | 326 " | |

The veterinary reports on each voyage indicate the nature of the diseases ascertained and medically treated. Cases of colic were, of course, observed and treated in accordance with their nature. There have been numerous cases of excoriations of varying severity and extent. Several wounds from bites have been observed, some of which have required extensive surgical treatment, while the veterinary surgeon has been called upon to treat a few cases of abscess and local inflammation. Bronchial ailments are met with, even extensively in the case of some transports. The consignees, who are very critical concerning the condition of the horses on arrival at the port of discharge, have rejected two horses (asserted to be suffering from emphysema of the lungs); the three deaths (·5 per 1,000) were due to pneumonia (one case) and colic (two cases).

Transportation in ships is not injurious to horses, provided the duration of their stay on board is not too long and that proper precautions are taken. Horses are not unfavourably influenced by a sea voyage and they never become seasick or show signs of uneasiness by reason of the ship's movements. They possess amazing powers of maintaining equilibrium during the pitching and rolling of the vessel; they are capable of distributing their weight on the legs synchronously with the ship's movements, and even without moving their legs. It has been found convenient to place the horses very close to each other in the stalls, since this prevents injuries arising from kicks, but, in return, involves the risk of wounds from bites. Dense stowing is fraught with a serious risk to a recumbent horse, and the attendant grooms therefore have special instructions to observe in this respect.

The division of the hold into stalls, proper adjustment of the level at which the beams are fastened, provision of fillets on the flat deck, appropriate stowage of the horses and observance of veterinary hygienic precautions, in addition to proper grooming and care of the animals during their stay in a satisfactorily ventilated ship, all constitute important measures to ensure safe protection of the animals during the voyage. They are of particular significance in a ship carrying living animals, since it has been shown that both ship and cargo have been endangered in cases where sick or dead horses, owing to heavy seas, are placed in the ship in such a manner that the vessel has acquired a list. This has increased as additional horses, being unable to withstand the aggravated conditions due to the list, have been thrown helplessly into the lower part of the hold. In addition to important economic considerations, the question of animal protection is of paramount importance in the transportation of horses in ships.

## SULPHATHIAZOLE EFFECTIVE IN FOUL BROOD DISEASE

In a conference held recently at the North of Scotland Agricultural College, Mr. A. S. C. Deans, head of the beekeeping advisory department, stated that experience in the college area during the past four years had shown sulphathiazole, an M. and B. drug, to be effective in the cure and prevention of foul brood disease. Following American methods, it was given in sugar syrup and fed to the bees, and there had been great success with it.

Last year, however, the extremely bad weather had caused a scarcity of sugar, and the idea had occurred to him to pulverise the drug and dust it on to the bees and the brood in the hive.

In the 1950 trials, covering 25 colonies, no combs, no matter how badly infected, were removed from the hives. Treated colonies normally regained "morale" a few days after treatment and all trace of disease was eliminated in six weeks.

"An overdose of sulphathiazole does not in any way harm the bees," added Mr. Deans, "in fact we reckoned it gingered them up." He had found, both last year and this, the dusting of the bees was successful and saved sugar and money.—*Farming News.*

## CLINICAL COMMUNICATION

# INFERTILITY IN A BULL AT AN ARTIFICIAL INSEMINATION CENTRE

### Suspected Case of *Vibrio foetus* Infection

H. J. BALLINGER AND L. E. A. ROWSON, M.R.C.V.S.

The bull "A" was brought to the Cambridge A.I. Centre in January, 1946. During the period January 21st, 1946, to April 16th, 1946, using semen collected from him, a total of 486 inseminations was carried out on 388 cows.

From the start it was noticed that his conception rate was below normal, but not sufficiently so to cause undue alarm. As time went on, however, more and more cows returned to oestrus, and it was decided to withdraw him from service.

The period during which the bull was used was an extremely busy one, when large numbers of cows were being inseminated to calve in the following autumn. For this reason most of the inseminations were carried out on cows which had not been inseminated since calving. Of the cows which failed to conceive to the first service by bull "A" some were re-inseminated by him, but the majority were re-inseminated with semen from a bull "B," known to have a high rate of fertility. At the same time semen from this fertile bull "B" was also being used for inseminating cows which had not previously been inseminated by bull "A."

Investigation of office records showed a curious feature. Whereas the fertile bull "B" had been obtaining a normal conception rate on cows not previously inseminated with bull "A" semen, there was a marked drop in his conception rate on cows on which bull "A" had previously been used.

It was decided to investigate the matter thoroughly and not rely on inadequate or assumed information provided by returns from farmers. Information was obtained on 75 per cent. of the cows inseminated by bull "A" by visiting farmers and finding out what happened to each individual cow.

In Table I services have been divided into firsts, seconds and thirds, ignoring whether the cows had been inseminated previously by other bulls, although in the majority of cases they had not.

TABLE I.—RESULTS OF INSEMINATION BY BULL "A"

| | Services | | | |
|---|---|---|---|---|
| | 1st | 2nd | 3rd | Total |
| Number investigated ... | 291 | 66 | 7 | 364 |
| Actual calvings: | | | | |
| Bulls ... ... ... | 15 | — | — | 15 |
| Heifers ... ... | 17 | 2 | — | 19 |
| | 32 | 2 | — | 34 |
| Presumed successful: | | | | |
| Sold in calf ... ... | 5 | — | — | 5 |
| Aborted ... ... | 3 | — | — | 3 |
| Died ... ... ... | 1 | — | — | 1 |
| | 41 | 2 | — | 43 |

Thus, 32, or 11 per cent., of 291 cows inseminated actually calved to the first insemination by bull "A." Including presumed pregnancies, 41, or 14 per cent., can be considered successful inseminations.

Let us now look at the results when the fertile bull "B" was used to inseminate 166 cows previously inseminated by bull "A."

TABLE II.—RESULTS OF INSEMINATION BY BULL "B" ON COWS PREVIOUSLY INSEMINATED BY BULL "A"

| | 1st | 2nd | 3rd | 4th | 5th | 6th | 7th | 8th | 9th | 10th | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Inseminations | 166 | 96 | 41 | 14 | 6 | 3 | 1 | 1 | 1 | 1 | 330 |
| Actual calvings: | | | | | | | | | | | |
| Bulls ... | 10 | 10 | 1 | — | 1 | — | — | — | — | — | 22 |
| Heifers ... | 10 | 12 | 7 | 1 | — | — | — | — | — | — | 30 |
| | 20 | 22 | 8 | 1 | 1 | — | — | — | — | — | 52 |
| Presumed successful: | | | | | | | | | | | |
| Sold in calf | — | 1 | 1 | — | — | — | — | — | — | — | 2 |
| Aborted ... | — | 1 | — | — | — | — | — | — | — | — | 1 |
| Now in calf (at time of investigation) | 4 | 1 | 4 | — | 1 | 3 | — | — | — | 1 | 14 |
| | 24 | 25 | 13 | 1 | 2 | 3 | — | — | — | 1 | 69 |

Out of the 166 cows, only 24, or 14 per cent., became pregnant to bull "B" at the first insemination following bull "A."

It has already been mentioned that bull "B" was also used during the same period with the same semen samples on cows not previously inseminated by bull "A." The results of a random sample of 166 first inseminations by him are given in Table III.

TABLE III.—RESULTS OF INSEMINATION BY BULL "B" ON COWS NOT PREVIOUSLY INSEMINATED BY BULL "A"

| | 1st | 2nd | 3rd | Total |
|---|---|---|---|---|
| Inseminations ... | 166 | 96 | 41 | 303 |
| Actual calvings: | | | | |
| Buils ... ... | 34 | 23 | 7 | 64 |
| Heifers ... | 41 | 19 | 6 | 66 |
| | 75 | 42 | 13 | 130 |

It will be seen that 75 cows, or 45 per cent., actually calved to the first service. These were a random sample and take no account of abortions, etc., so the figure of 45 per cent. is probably conservative.

Table IV gives a comparison of the results in the three groups.

TABLE IV.—COMPARISON OF TABLES I, II AND III

| | Actual calvings | Abortions, sold, etc. | Total |
|---|---|---|---|
| | Per cent. | Per cent. | Per cent. |
| TABLE I Bull "A" ... ... ... | 11 | 3 | 14 |
| TABLE II Bull "B" following Bull "A" | 12 | 2 | 14 |
| TABLE III Bull "B" ... ... ... | 45 | Disregarded | 45 |

These figures reveal one of two possibilities; either the cows inseminated by bull " A " were comprised largely of infertile animals, or else the semen injected was defective or infected, or both, and was not only preventing conception at that time but preventing subsequent conception to other bulls.

Considering that the number of cows inseminated by bull " A " was fairly large (388), it is unlikely that such a high proportion would be infertile, particularly when other cows, being inseminated over the same period and from the same areas but by other bulls, were becoming pregnant at the normal rate.

We were therefore led to the conclusion that the bull himself was infertile. This was rather surprising in view of the semen samples obtained, for although not outstanding they were reasonably good and stored excellently at 5° C., showing good activity after four days. Neither did there appear to be any morphological abnormalities.

As soon as it became obvious that cows were not conceiving to the fertile bull " B," samples of bull " A's " semen, taken as aseptically as possible, were submitted for bacteriological examination. No significant bacteria, however, were found. Sheath washings failed to reveal any trichomonads, and the cows inseminated by bull "A" appeared perfectly healthy with no signs of discharge.

The history of the case was highly suggestive of some form of infection of the testicles, epididymis or accessory glands being transmitted via the semen to the cows, preventing conception both at the first service and at subsequent services by other bulls.

As time went on an astonishing fact was brought to light. Out of 205 cows investigated and which had been inseminated by bull " B " or other bulls following insemination by bull " A," no fewer than 114 were either still barren one year after insemination by bull " A " or had already been slaughtered as sterile. It is again extremely unlikely that in this period more than 50 per cent. of the cows submitted to this bull should be sterile, while those submitted to other bulls were normally fertile. We can only conclude that the bull was responsible for this state of affairs.

## Discussion

It seems highly probable that in spite of negative bacteriological findings the bull was ejaculating infected semen, although the nature of the infection is not known. The fact that a very high proportion of animals inseminated remained permanently sterile is extremely difficult to explain when viewed against the negative bacterial findings and lack of clinical symptoms. It is also not known whether fertilisation actually took place with degeneration of the developing ovum at a later date, or whether the sperm died off before ovulation occurred. In the latter case, one would expect fertilisation to take place only when the cow was inseminated at or after the end of heat, when the sperm would survive only for a short period before fertilisation.

The possibility that the cause was a genetic factor is ruled out by the results of subsequent inseminations by the fertile bull " B." The history of inseminations by the fertile bull " B " suggests that although fertilisation probably took place no implantation followed. This may have been equally true with bull " A," but this does not account for failure to conceive to later inseminations by fertile bulls.

Assuming that fertilisation did take place with infected bull " A " semen, then the period between insemination and normal implantation would be quite sufficient for inflammatory changes to occur in the uterus and prevent implantation.

If such a bull as bull " A " had been placed in a large centre with many satellite sub-centres the damage and losses would have been enormous, yet it would not have been possible to pick the bull out by normal clinical methods. Reliance on microscopic examination alone does not detect the infected bull unless changes have already occurred in the testicles and accessory glands.

## Conclusion

From the evidence of this case and from evidence obtained from a second animal there is, in our opinion, little room for doubt that a condition occurs in bulls about which little is yet known, which can be transmitted to cows by artificial insemination, and can also be transmitted from bull to bull by way of the artificial vagina or instruments used in its preparation.

The methods advocated in the past for sterilisation of artificial vaginae, etc., are not adequate: they should be washed, stripped and sterilised by boiling. The latex liners will stand this treatment quite well for a considerable period. Thermometers, lubricating rods, etc., should be sterilised in the same way as inseminating pipettes, and unsterilised lubricating rods should not be dipped into the lubricating medium.

Particular care should be taken with every new bull introduced into the centre, especially if his initial conception rate appears rather low.

## LEGAL NOTES

### Fowl Pest

*Poultry Dealer Fails to Keep Records of Sales*

At West Ham Police Court, on September 19th, G. W. Barham, a poultry dealer and owner of a pet shop, at 50, Angel Lane, Stratford, London, E.15, was fined £20 for failing to keep records of his purchases and sales of poultry as required by Article 9 of the Live Poultry (Regulations of Sales, Exhibition and Movement) Order of 1949 and the Diseases of Animals Act of 1950.

The defendant pleaded guilty, but stated that, whereas he had previously kept the required records (which had frequently been inspected by both the Local Authority and Ministry of Agriculture officials), he had only failed to do so this year. This was due to a misunderstanding. Formerly he was also required to keep particulars of sales of poultry which were sold for breeding purposes and which did not come within the scope of the Ministry of Food control of prices on birds sold for human consumption. When he was informed that the Ministry of Food no longer required such records to be kept, he erroneously assumed that it was no longer necessary to keep any records whatsoever.

Mr. H. E. Bywater, prosecuting on behalf of the West Ham Corporation, stated that there has been a disquieting number of outbreaks of fowl pest in the borough and neighbouring boroughs and birds involved in two of these outbreaks had been purchased from defendant's shop. Fowl pest was subsequently confirmed on Barham's premises. The birds thereon were destroyed, some compensation being paid to the owner, who had been prevented from carrying on his business in poultry for about two months.

The Order was designed to help control the spread of disease, but, owing to the lack of records, it had proved impossible to trace the movement of poultry from this source of infection. Thus the efforts of the authorities in attempting to control the spread of infection were seriously hampered and it was feared that there might well be other outbreaks of fowl pest and other sources of infection which had not been brought to notice.

* * * * *

### Weekly Wisdom

*Some said that we could only meet the faith of the Marxists by having another equally dogmatic and all-embracing of our own. But probably the worst thing was to think that one knew the truth about everything and that all who differed were wrong. Many tragic things had been done in obedience to fanatical doctrines.*—Professor Gilbert Murray, o.m.

## ABSTRACTS

### Dwarfism in Beef Cattle*

An hereditary defect, "dwarfism," was observed in a herd of pure-bred Hereford beef cattle. The defect is evident at birth and can be classed as a latent lethal, the affected animals seldom reaching reproductive age. Although reliable data were available on only one herd, reports show that the defect occurs in many pure-bred Hereford herds. The frequency and distribution of the defect indicate it is inherited as a monofactorial, autosomal recessive. Observation of known carrier animals indicated that the heterozygotes, or carriers, were somewhat intermediate. Not all intermediates in other herds can be classed as carriers as there must be other genes that produce the intermediate type beef animals. The dwarfism reported here appears to be different from other achondroplasias reported to date. Field reports tend to indicate that the frequency of the "dwarfism" gene is increasing in the pure-bred Hereford population.

W. T. R.

* **Dwarfism. An Hereditary Defect in Beef Cattle.** JOHNSON, L. E., HARSHFIELD, G. S., & MCCONE, W. *J. Hered.* **41.** 177-181. (Authors' summary.)

* * * * *

### Dietetic Study on Mice*

Although modestly presented, the results reported in this paper form part of a study which is of very great medical and veterinary importance.

Six experimental diets comprised of natural food were fed to groups of mice (housed individually or as breeding pairs) to determine their capacity to support reproduction, growth and resistance to test infections of either *Mycobacterium tuberculosis* H 905 or *Salmonella enteritidis* MT-I-A.

There were clear-cut differences in the relative efficiency of the diets for reproduction and growth. The differences between the relative efficiency of the diets for resisting infection were less marked and consistent, but it was clear that they did not resemble those concerning reproduction and growth. Thus the best of the diets for reproduction was also a good diet for growth, but was the poorest for resistance to infection. If, as seems possible, such a diet is lacking in some unknown substance essential for resistance to infection, the very fact of its being a good diet for rapid growth before and after weaning might serve only to increase the need for whatever was lacking.

In parallel work in the U.S.A., Schneider (*Trans. Amer. Ass. Cereal Chem.*, 1949, **7**, 4) has found that whole wheat contains what he has termed "the mouse-salmonellosis resistance factor" and that it appears to be concentrated in the wheat germ.

A. N. W.

* **Breeding, Growth and Resistance to Infection of Mice Fed on Six Natural Diets.** HOWIE, J. W., & PORTER, G. (1950.) *Brit. J. Nutrit.* **4.** 175-185.

* * * * *

### Effects of Hypo- and Hyper-thyroidism on Fleece Growth in Sheep*

The author, using male lambs, shows that in an induced state of mild hyperthyroidism the length of wool fibre is increased, whilst in hypothyroidism it is decreased. Neither state, nor indeed actual thyroidectomy, influences fibre thickness. Admitting the need for further investigation, he conjectures that wool growth is stimulated as part of the

(*Continued at foot of next column*)

general action of the thyroid in increasing body metabolism with anabolic effects. Conversely, any marked falling off in the basal metabolic rate might impede normal wool growth.

W. T. R.

* **Effects of Hypo- and Hyper-thyroidism on Fleece Growth in Sheep.** MAQSOOD, M. (1950.) *Nature.* **166.** 647.

## REVIEW

**[A survey of the Transit of Farm Animals between the Scottish Islands and the Mainland of Scotland.** Summary of a Report of a Commission appointed by the University of Glasgow Veterinary School Section of the University of Glasgow Animal Welfare Society, a branch of the Universities Federation for Animal Welfare. Pp. 39, 2 maps. U.F.A.W. London, 1951. Price 6d.]

This is an extremely interesting survey that sets forth very clearly the conditions of farm animal transit in the areas visited by the Survey Sub-Committee. It is not stated in the report whether each of the areas was visited by all the members of the Survey Sub-Committee; it may be that some variation in emphasis of different parts of the report is due to the observations being made by different individuals.

There is always a risk in a report of this kind that certain points are stressed unduly; there is a complete absence of such undue stress and indeed a pleasing feature of the whole report is its well-balanced tone. The report is a useful document, for it is doubtful if anywhere else is there to be found in a readily available form the information presented in it. Much of the comment that may be made on the report really falls into the category of indicating where the survey might be supplemented.

The first part of the report deals with conditions in the Northern Islands; that is to say, the Orkney and Shetland groups of islands.

Motor floats are used for the transport of animals on the mainland of Orkney and for the transport of animals from these islands now connected to the mainland by causeway. Attention is directed to the unsatisfactory nature of the ramps on some of these vehicles and to the inadequacy or absence of guard rails for these ramps. The same deficiencies are not unknown on vehicles used for the transport of animals in Central and Southern Scotland. Transport from the other islands to the mainland of Orkney is by boat. Generally the conditions of loading and unloading are reasonably satisfactory; this is due in some measure to the existence of good piers. The ventilation of the spaces used for animals on the boats providing inter-island transport is not all that might be desired, even though the journeys are short. A detailed description is given of the loading of animals at Kirkwall, their journey by the s.s. *St. Clement* and the unloading at Aberdeen. Generally speaking, the conditions appeared satisfactory. No mention is made of transport by other vessels, though the statistics given on page 13 seem to indicate that other vessels are used for the transport of animals from Orkney to Scotland.

Cattle and sheep are brought from the North Isles of Shetland to Lerwick on the mainland of Shetland by the North Isles motor vessel *Earl of Zetland*. The conditions prevailing on her are satisfactory. In some cases the animals are loaded directly into the *Earl of Zetland* from

the local pier; in other cases they are taken out to the anchored vessel in flat-bottomed boats from which cattle are lifted in slings by the ship's derrick. There seems to be a tendency for cattle to strike the ship's side when being slung inboard. Sheep are small and light so they are simply lifted by hand. Again it is emphasised that good piers or slipways facilitate the loading of cattle. The journey from the North Isles of Shetland to Aberdeen is quite prolonged since animals must be disembarked at Lerwick from the North Isles motor vessel and are then re-embarked on the s.s. *Saint Clair* for voyage to Aberdeen. The two stages of the voyage each occupy less than 18 hours but the total time taken on the journey from Cullivoe in Yell (one of the North Isles) to Aberdeen is not less than 28 hours. During the whole of this journey the animals received no food or water. A strong recommendation is made that the animals should be watered and fed at Lerwick prior to re-embarkation for the journey to Aberdeen. The particular crossing to Aberdeen observed was fairly smooth and ventilation was adequate. Conditions can become less satisfactory if the crossing is rough and the vessel has to be battened down.

No mention is made of any traffic in Shetland ponies.

Though on page 12 it is stated that no unnecessary beating with sticks was seen when a batch of cattle were loaded on the s.s. *St. Clement* at Kirkwall, an exactly opposite picture is painted on page 22 under a general discussion on the conditions prevailing in Orkney and Shetland. There it is stated that " it was frequently observed that animals were in fact beaten with sticks," " A drover was seen in one instance at Kirkwall to lash a bullock several times across the face " and " Very often the methods employed so terrify the animals that they rush wildly on to the gangway of the ship or up the ramp of the float."

The second part of the report deals with the Western Islands. The writers adopt the descriptions Inner Hebrides and Outer Hebrides. Strictly speaking, the Hebrides are the chain of islands stretching from the Butt of Lewis to Barra Head—a chain sometimes known as the Long Island. The descriptions Inner Islands and Outer Islands are therefore more correct than Inner and Outer Hebrides. Though the description Inner and Outer Hebrides may be accepted with these reservations, it is quite wrong to include Bute, Arran and Cumbrae under the Inner Hebrides as is done on page 23.

No details are given of the transport of animals from the islands in the Clyde Estuary (Bute, Arran and Cumbrae). The survey does not appear to have embraced the transport of animals from the Inner Islands, Gigha, Colonsay, Mull, Coll, Tiree or Skye, nor the Outer Islands, Lewis, Harris or Barra.

A detailed description is given of the conditions prevailing in Islay, one of the Inner Islands. The improvised arrangements for sales out of doors are not very satisfactory; there again the loading ramps and their guard rails on lorries call for comment.

Handling of the animals was in some places unnecessarily rough.

Loading of the animals at Port Ellen and Port Askaig was, in the opinion of the Commission, badly managed, confused and disorderly. The conditions prevailing on the vessel *Loch Broom* call for unfavourable comment, this being due to the ship being loaded beyond capacity.

It is surprising to read that " attested and non-attested cattle were placed at opposite ends of the ' tween-deck ' and this in a ship loaded beyond capacity."

Conditions in the Outer Islands called for adverse criticism. The picture given is not in any way overdrawn. The transfer of cattle from Eriskay to South Uist was accompanied by much brutality: " the animals were beaten heavily," " were goaded unmercifully " and " were kicked and beaten."

The sales in South Uist were characterised by unnecessary goading of the animals; " a man was seen who appeared to take a sadistic delight in thrashing the cattle each time they passed the sale ring," and " there was much unnecessary beating and prodding."

The method of moving horses in groups of two and three tied head to tail is described and the risk of the front horse lashing out is emphasised. Another accident that has occurred (though not mentioned in the report) is strangulation of the second or third horse.

Loading of cattle at Loch Skiport and Loch Boisdale in South Uist receives no comment. Loading of cattle at Lochmaddy in North Uist was observed; the conditions were favourable in that the state of the tide placed the ship so that the gangway was horizontal. If the Commission had seen loading at low tide with the gangway pointing steeply down on to the ship, they might have formed a much less favourable impression, especially if two ships lay alongside each other and the cattle had to be driven across the first ship to the second. Again, attention is drawn to the treatment of the cattle, goading and tail-twisting being prevalent. " Small boys beat the animals as they passed over the gangway."

The ship concerned was the *Hebrides*, built in 1898. In spite of her age, this ship is well found and is a good seaboat. The unhygienic and slippery state of the floor in the main-deck and the inadequacy of the ventilation in the " tween-deck " called for comment, but these conditions may also be seen on newer and faster boats sometimes used for animal transport on this route.

Throughout the report the activities of police officers and inspectors of the Societies for the Prevention of Cruelty to Animals in preventing animal suffering are discussed. No reference is made to the very useful work done by the Veterinary Officers of the Ministry of Agriculture in connection with the conduct of sales and transport of animals. The report brings out the multiplicity of Societies for the Prevention of Cruelty to Animals in Scotland: it is rightly suggested that benefit would accrue from closer association of these various independent societies.

A useful list of suggestions for improvement of conditions concludes the report; this extends to four pages.

A long list of acknowledgments is given on the inside of the back cover; two members of the U.F.A.W. Scientific Sub-Committee are wrongly designated therein.

## A.I. CENTRE BULL MOVEMENTS

In its current issue *The Home Farmer* (the organ of the Milk Marketing Board) states that the maximum period which a bull can be in service at a particular Centre is about two and a half years, and consequently those bulls that have completed this time must be transferred to another Centre. "This transfer is carried out *en masse* towards the end of the summer, so that each animal will be settled into a new Centre in time for the peak breeding period. As the transfer is carried out in this way, some sires may serve slightly longer than two and a half years at one Centre, but each one will be transferred before many of his daughters reach service age and, in consequence, there should be no danger of sire/daughter matings." Information as to bulls due for transfer can be obtained on application to Centre Veterinary Managers, and in future issues of the journal attention will be drawn to the Board's outstanding progeny tested sires and the Centres at which they are located.

# NOTES AND NEWS

### Diary of Events

Oct. 4th.—Meeting of the Central Division, N.V.M.A., at the Royal Veterinary College, Camden Town, N.W.1, 6 p.m.

Oct. 9th.—Meeting of the South-Eastern Division, N.V.M.A., at Maidstone (Royal Star Hotel), 2.30 p.m.

Oct. 10th.—Meeting of the Editorial Committee, N.V.M.A., at 36, Gordon Square, W.C.1, 2 p.m., to be followed by meeting of the Executive Sub-committee.

Oct. 12th.—Meeting of the Society for the Study of Animal Breeding, at the Wellcome Research Institute, 183-193, Euston Road, N.W.1, 2.15 p.m.

Oct. 13th.—Special General Meeting of the Society of Women Veterinary Surgeons, at Liverpool (Veterinary Hospital, Pembroke Gardens), 2.15 p.m.: General Meeting of the Society, 2.30 p.m.

Oct. 18th.—Meeting of the Western Counties Division, N.V.M.A., at Exeter (Imperial Hotel), 2 p.m.

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## THE N.V.M.A. AT EASTBOURNE

This year's Congress opened under the universal cloud of acute anxiety concerning the King's health. The profession, in common with all his people, united in powerful intercession for the success of the operation of lung resection performed on Sunday morning. The welfare of our beloved exemplar of a dedicated life of service, and deepest sympathy with him and his devoted family, have filled our minds and hearts. To this sense of concern the President gave fitting expression at the opening ceremony on Monday last when it was decided to send the following message to the Lord Chamberlain:

> "At the 69th Annual Congress of the National Veterinary Medical Association, the members present wished to convey to their honoured Patron, His Majesty the King, their loyal greetings and earnest wishes for a speedy recovery.
>
> "In this hour of anxiety every member of the veterinary profession throughout the British Commonwealth would wish to extend the deepest sympathy to the Queen and all the Royal Family."

. . . . . .

The attractions of the meeting place of Congress and of its lovely South Down hinterland drew many conference participants to Eastbourne for the week-end before the official opening on Monday. Indeed, to those aware of the charm of the south-east corner of England, two intervals of roughly 20 years in its selection for the Annual Meetings of the N.V.M.A. seem over long. We met here last—to be precise at Folkestone—in 1932, for our Jubilee Congress under the presidency of Colonel P. J. Simpson. On that occasion our hosts were the South-Eastern Division, who to-day are collaborating with the men of Sussex in entertaining the Association. We shall take the opportunity in our Congress Number to delve a little into the interesting past of these flourishing veterinary societies; for the moment reference must be confined to the important introductory rôle they played in our proceedings on the evening of Sunday last whilst, at the same time, acknowledging their major contribution to the personnel of the Provisional Committee responsible for the Congress programme. The key post of Hon. Local Secretary was undertaken readily by Mr. S. L. Hignett, President of the Sussex Veterinary Society, who was upheld in his onerous duties by Major C. J. R. Lawrence, the Hon. Treasurer and former Hon. Secretary, both having the experience of Mr. H. T. Matthews to guide them in his capacity of Chairman of the Provisional Committee.

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Thus the first item on the programme was the Sunday evening reception, which took the form of a cocktail party, at the Grand Hotel by the Sussex and South-Eastern Division, there being a good attendance for this hospitable overture. The enjoyment of this pleasant function was much enhanced, not only by the greetings extended to the company by Mr. and Mrs. Hignett and Dr. Montgomerie, the President of the South-Eastern Veterinary Association, but by the happiness of finding our President of the International Congress Year, 1949, in better health after his recent recuperative visit to South and East Africa.

The extension of the Eastbourne tennis season by an international tournament threw the Congress, for accommodation reasons, a little later into the autumn than the Provisional Committee would have wished, but the shortening hours of daylight at least heightened the attraction of the time-honoured list of evening social events, to which this joint Divisional "At Home" provided so enjoyable an introduction.

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Conferences such as ours furnish a notable example of mutual aid. They are welcomed for obvious reasons, by the accommodating municipality, while we on our part are indebted to our civic hosts in respect not only of the general facilities provided, but of certain special features of the gathering. Two of these marked the opening and closing, respectively, of the proceedings on Monday last. At ten o'clock on the morning of the 24th came the Civic Opening of Congress by His Worship the Mayor, Alderman R. J. S. Croft, who bade us welcome with a sincerity even greater than that which the felicitous terms commonly employed on such occasions can convey.

Our President, Mr. S. F. J. Hodgman, responded in the same spirit of appreciation, which certainly was intensified for us in the evening by the most hospitable and entertaining Civic Reception, dance and cabaret, given by the Mayor and Mayoress, also held in the Winter Garden in Devonshire Park.

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In the meantime, and during the morning, the President had declared open the admirably selected and arranged display of surgical instruments, drugs, etc., accommodated so conveniently in the Pavilion above the Floral Hall at the Winter Garden, in which impressive place of meeting the scientific sessions are being held. This year these were introduced by a significant feature constituting a departure from the customary procedure of passing immediately to the consideration of one of the previously distributed papers. This took the form of a series of important addresses on "Control of Diseases of Livestock: a comparison of methods in different countries and their significance," by Sir Thomas Dalling, Chief Veterinary Officer of the Ministry of Agriculture, and on the measures towards that end taken in their respective countries contributed by Dr. L. P. de Vries, Secretary of the Animal Health Service, Holland, and Lieut.-Colonel Rolland O. Scott, head of the U.S.A. Veterinary Forces in this country. These valuable surveys were closely related to the planning of future activities in dealing with diseases of livestock on a national and international basis.

On the morning of the following day the difficult problem of the control of Johne's disease, complicated by the absence of a specific method of diagnosis, was considered, discussion of the paper by Dr. A. W. Taylor, of Compton, being

opened by Mr. H. T. Matthews. There followed, at noon, a reminder of our obligations as a profession in relation to the perilous times in which we live, in a masterly address by an eminent member of the Royal College of Surgeons, Mr. J. F. Loutit, of the Harwell Centre, on "The effect of atomic weapons on domestic animals." In the afternoon a fine series of colour ciné-films, showing various major surgical operations on small animals, was shown. This highly successful excursion into the most modern realms of tuition was arranged by Mr. Gordon C. Knight, of the Royal Veterinary College, and was followed by an equally illuminating discussion.

While this was in progress the ladies were enjoying a tour of the countryside, and all met in the evening at the Grand Hotel for the President's reception and dance, where an overflowing attendance paid homage by their presence to the equally popular President and Mrs. Hodgman.

(*To be continued*)

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## A MEMORIAL TO DR. FRED BULLOCK

During the R.C.V.S. presidency of Mr. Howard Dawes he issued an appeal for the creation of a Dr. Bullock Memorial Fund with the primary object of causing a posthumous portrait in oils of Dr. Bullock to be hung on the walls of the Royal College amongst those who have brought honour to the veterinary profession.

Mr. Arnold Mason, Royal Academician, has been commissioned to paint this portrait which, it is understood, will be ready for the October Quarterly Meetings of Council.

The President, Professor J. G. Wright, therefore, proposes to have a small ceremony on Friday, October 12th, at 12 noon, for the purpose of receiving the portrait into the custody of the Royal College.

If there is any member of the profession or any other person who subscribed to the Dr. Bullock Memorial Fund who would like to be present at the ceremony, would they please so inform the Registrar, R.C.V.S., not later than Wednesday, October 3rd. As many as possible will be accommodated, but should it be necessary to limit numbers then priority will be given to those persons who replied first.

The portrait is three-quarter length and depicts Dr. Bullock wearing the robes of a Doctor of Laws in the University of London.

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## Agreement between the R.S.P.C.A. and the N.V.M.A. in regard to the Joint Veterinary Advice and Free Treatment Schemes

As was announced in our issue of last week, this Agreement, which came into operation in 1939 and was revised in 1950, has again been reviewed by both organisations and will continue to operate with certain modifications which take effect from October 1st, 1951.

The agreed modifications provide for the adoption of a new procedure in dealing with proposals for the establishment of new clinics, etc., received from their local branches and referred to the Association by Headquarters, R.S.P.C.A.; also for an increase in the fee payable for normal cases dealt with under the voucher scheme and for animals painlessly destroyed. In addition, the mileage allowed for cases visited has been improved.

A copy of the new Agreement can be obtained from the General Secretary, N.V.M.A., 36, Gordon Square, W.C.1, upon request.

## PERSONAL

*Births.*—Waters.—On September 19th, 1951, at Prested Hall Nursing Home, Kelvedon, to Helen (*née* Mitchell), wife of P. J. Waters, M.R.C.V.S., a son—Andrew John.

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*Marriage.*—Black—Ricketts. On September 8th, 1951, at St. Mary's Church, Dartmouth, Park Hill, London, N.W.5, Archibald McColl Black, M.R.C.V.S., to Beryl Cecilia Ricketts.

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## ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Swine Fever:

*Bucks.*—Woodfield Spring Farm, Hog Lane, Ashley Green, Chelsham (Sept. 17th).

*Cheshire.*—Greenfields, Back Lane, Congleton (Sept. 18th).

*Essex.*—Park View, Stambourne, Halstead (Sept. 21st).

*Hunts.*—Park Hall, Somersham (Sept. 17th); Church Farm, Fenstanton (Sept. 18th); Railway Crossing, Heath Road, Warboys (Sept. 21st).

*Derbys.*—Birley Vale Piggeries, Freeheville, Beighton (Sept. 20th).

*Isle of Ely.*—Tubb's Farm, Sutton, Nr. Ely (Sept. 17th); Westmoor Farm, Chatteris (Sept. 18th); Crooked Bank, South Brink, Wisbech; New Road, Chatteris (Sept. 19th); Red House Farm, North Fen, Sutton, Nr. Ely (Sept. 20th).

*Kent.*—Rawlings Street Farm, Milstead, Sittingbourne (Sept. 18th); Link's Farm, Worth; Great Bessington, Adisham; Homleigh, Ulcombe (Sept. 19th).

*Lancs.*—Moss Hey Piggeries, Chapel Road, Marton, Blackpool (Sept. 19th).

*Lincs* (*Holland*).—Pinstock Piggeries, Gedney, Spalding (Sept. 17th).

*Lincs* (*Kesteven*).—The Cottage, Boothby-Graffol (Sept. 18th); The Greyhound Inn, 23, Spalding Road, Bourne (Sept. 19th).

*Lincs* (*Lindsey*).—9, Commonside, Crowle, Scunthorpe (Sept. 18th); Firbeck Avenue Allotments, Skegness (Sept. 21st).

*Norfolk.*—Manea Runs, West Welney; Laurel Farm, Banningham, Norwich; The Homestead, Scarning, E. Dereham (Sept. 17th); Park Breck Farm, Relpham Road, Taverham (Sept. 19th); Chequers Public House, Southgate Street, King's Lynn; Mill Farm, Castle Rising (Sept. 20th).

*Northants.*—Mulgrove Cottage, Newtown, Brigstock, Kettering (Sept. 18th); Rectory Cottage, Barton Seagrave (Sept. 20th).

*Staffs.*—11, Eastgate Street, Chase Terrace, Walsall (Sept. 18th); Bower's Hall Farm, Standon (Sept. 19th).

*Suffolk* (*East*).—St. John's Farm, Belton, Gt. Yarmouth (Sept. 17th).

*Suffolk* (*West*).—Hill House, Norton (Sept. 18th); Mill Farm, Norton (Sept. 19th).

*Warwick.*—Napton Road Farm, Southam, Rugby (Sept. 21st).

*Worcs.*—The Woodland, New End, Astwood Bank, Redditch (Sept. 18th); 222, Hagley Road, Halesowen; Talbot House, Barker's Lane, Wythall (Sept. 19th).

*Yorks* (*E.R.*).—Front Street, Middleton-on-the-Wold, Driffield (Sept. 17th).

*Yorks* (*W.R.*).—Throstle Nest Farm, Fogley Lane, Bradford (Sept. 20th).

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## ERGOT POISONING

The recent outbreak of poisoning at Pont St. Esprit is the subject of an article in the *British Medical Journal* for September 15th, by three French doctors who treated the affected patients. They state that the symptoms observed during the first 15 days of the illness could be divided into four phases: absorption of the poison took place during a single day, and as the amounts of bread eaten were often very small, a high proportion of the poison must have been present. The first symptoms appeared after a latent period of six to 48 hours. These symptoms consisted of a depressive state with anguish and slight irritation. Some hours later, the symptoms became more clearly defined, and most patients had digestive disturbances, with, in some cases, abdominal pain, vomiting and diarrhoea.

The next phase consisted of disturbances of the autonomic nerves system, with gusts of warmth, followed by the impression of "cold waves," with intense sweating crises. The extremities were cold, and the temperature sub-normal. Mydriasis was frequent with diminution of the light reflex. The third phase consisted of insomnia, which lasted several days, the digestive organs quickly

becoming worse, and a state of giddiness persisted. About 25 cases were of the severe delirious form, and four patients, three men and one woman, died. The woman, who had hyperthyroidism, showed at her death a moist gangrene of the toes. An interesting feature of some of the cases was that the delirium was the first serious sign to be noticed—between ten to 12 days after the first onset of poisoning.

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### X-RAYS IN PIG BREEDING

#### Use of X-rays for the Selection of Breeding Stock

It has long been known that under consistent environmental conditions body length and thickness of back-fat of the pig are inherited to a high degree. Considering the importance of these two factors in bacon carcases, any means of improving breeding stock for them deserves careful consideration and, if practicable in the field, the utmost exploitation.

Work by Mr. J. K. Walley* at the Animal Research Station, Cambridge University, over the last few years has shown quite definitely that X-rays (by films or direct screening) can be used to determine the rib number (as a measure of body length) and the thickness of the back-fat in the pig.

For ease of X-raying it is advised that the ribs are counted when the pig is under six weeks old—by preference in the first week. The thickness of the back-fat can be measured at any age and live-weight of the pig.

The back-fat measurement is best made when the gilts (or boars) are being finally selected for breeding. Animals which have too much fat (for their age and live-weight) at the shoulder and/or loin being put to fatten off, the best only being retained in the breeding herd.

Selection of the best animals for, say, carcase competition, in terms of body length and back-fat thickness could be made from a group of live animals in which other factors would appear to make them equally desirable as ultimate carcases.

For the measurements described above the smallest portable veterinary X-ray unit (cost about £250 new) may be used by the breeder or his veterinarian to make this selection for the improvement of pig breeding herds.

* Mr. J. K. Walley is now on the staff of the Low Temperature Research Station, University of Cambridge, and the Food Investigation Organisation of the Department of Scientific and Industrial Research.

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*Crystal Cat Show.*—This year's show, to be held in the Grand Hall, Olympia, October 12th to 13th, 1951, will be the largest cat show ever held in any part of the world and its quality will be in keeping with its size. All profits from the show are to be given to the Feline Research Fund of the Animal Health Trust. Novel features are being introduced, such as an international photographic competition, with the object of interesting a very wide public. The ordinary domestic "tabbies" will have classes and prizes to themselves, and one of the main objects of the show is to promote interest in the health and well-being of cats of all breeds and types among all sections of the public. The Secretary is Mr. A. W. Hunter, who can be contacted at the Crystal Cat Show Offices, Caxton Road, Wood Green, N.22 (telephone BOWES PARK 5261).

## CORRESPONDENCE

*The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the N.V.M.A.*

### "A STUDY OF CALF DISEASES"*

Sir,—With reference to Professor Weiper's suggestion that "Chloromycetin" (Chloramphenicol) might prove useful in some calf scours: in the course of a comparative trial during a fairly extensive outbreak of salmonellosis in young Ayrshire calves of up to 15 weeks of age, in December, 1950, and January, 1951, employing "Chloromycetin," streptomycin, combined penicillin and streptomycin, sulphapyridine, and sulphamezathine, it has been our experience that the first-mentioned antibiotic is of little value against *S. (enteriditis) dublin.*

Combined penicillin and streptomycin appeared to be a trifle more beneficial, but it was amongst the calves receiving sulphamezathine (eight-hourly, for five or six days) that the best response was obtained; and it was subsequently found necessary to administer this sulphonamide to the survivors of the other groups.

Though by no means specific, it seems probable that no better therapeutic agent is available to date.

I have not yet had an opportunity to employ chloramphenicol in other salmonellos.s, but the above interim note on *S. dublin* disease may perhaps prove helpful to anyone contemplating similar trials, and may lead to the publication of further experience with this and other therapeutic agents against a most troublesome and dangerous disease.

In "calf diphtheria," and indeed for all infections in which *fusiformis necrophorus* is implicated, I have found sulphapyridine to be the sulphonamide of choice.

This is a southerly, wet but well-drained, limestone district, and endemic coliform (?) septicaemias of very young calves do not commonly assume the serious proportions encountered farther north.

Pending the long overdue reformation of calf housing and management, and the incrimination of a specific virus, it is interesting also to speculate upon the possible significance of soil and climate.

The farming community in general has in the past devoted far too little time and attention to the very young calf. Too little money has been available to the veterinary profession for research into the disease problems involved; and news of the Glasgow School's intention to enter this field will be most warmly welcomed by all concerned.—Yours faithfully, Peter Turnbull, Midsomer Norton, Bath. *September 9th*, 1951.

*Weipers, W. L. (1951.) *Vet. Rec.* **63.** 557-561.

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### DDT POISONING OF CATS AND DOGS

Sir,—Referring to the abstract from the *Pharmaceutical Journal* published in your columns (September 15th), I would suggest that the information is of sufficient importance to merit very serious consideration.

Reference to various authorities in the veterinary field—Boddie (1947.) *Vet. Rec.*, **59.** 470-486; Hamilton Kirk (1951.) Index of Treatment; Milks. (1949.) Vet. Pharmacology & Therapeutics (U.S.A.), and others—would suggest that no real danger to the dog exists when DDT preparations are used in powder form or as aqueous solutions at the usual concentrations. I am assuming, of course, that the well-founded danger to the cat is fully recognised—indeed, special formulae omitting DDT have been prepared by reputable manufacturers for many years.

I feel that the R.S.P.C.A. would be doing a real service to the profession by publishing complete evidence of proved cases of DDT poisoning in the dog, using established preparations at normal concentrations and rate of use. The alternative to DDT being either B.H.C. or less efficient materials in erratic supply from overseas, merits full investigation of the Society's opinion before we as a profession discard a highly efficient parasiticide.—Yours faithfully, for Boots Pure Drug Co., Ltd., N. M. Black, *Veterinary Adviser*, Boots Pure Drug Co., Ltd., Nottingham, *September 19th*, 1951.

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### TUBERCULOSIS—BOVINE/HUMAN RELATIONSHIP

Sir,—I have waited in vain, with one exception, for the critics and tuberculosis experts to return to the offensive and question my proved belief that the Attested Cattle Scheme has been responsible for a very large increase in human pulmonary tuberculosis.

In his letter of September 8th, Mr. George A. Willis, of the Royal Veterinary College, London, reports that the death-rate for tuberculosis in Scotland has fallen; this is true, but it is much more marked in England. The quotation mentioned was a composite one, and I could not very well avoid mentioning the death-rate in my letter of February 4th, 1950, but the whole theme of my letter was that far too many individuals are becoming infected. An animal or a person does not die of an infectious disease until infection has, in fact, been acquired. A comparison between the high and low percentage attested areas in Scotland will demonstrate this better than any words of mine. I am well aware of the death-rate figures, but more so of the statistics of notifications.

I wish to correct an error in my letter of April 6th, 1950, in which there is the following quotation: "... which emphasises the serious state of affairs not only in Glasgow but also in Ross and Cromarty, which is entirely rural in nature." This quotation was obtained from a publication which I thought was and still think is reliable; in this instance the publication has proved to be inaccurate. The facts given on August 18th last are correct. The increase in human notifications in rural areas no doubt meant in the high percentage attested cattle counties, *e.g.*, Ayrshire.—Yours faithfully, L. Pitcher, 66, Coningsby Road, High Wycombe, Bucks. *September 15th*, 1951.